

## **CLAIMS**

5           1.- Procedure for the manufacture of high concentration manganese  
minitabets for aluminium bath alloying which, having as its object the  
production of Mn minitabets or tablets with a concentration between 90 and  
98% of said metal, starting from a mixture of powdered Mn Al, for the alloying of  
aluminium and other metal baths, is characterised in that it consists of using  
electrolytic Mn ground from flakes of a chemical purity of 99.7% or more, and Al  
powder atomised by mechanical means, with a controlled grain size distribution  
10           between 100 and 800 microns, and with over 80% powder between 350 and  
720 microns, while a check is made on the Mn grinding to prevent the Mn fine  
powder content being less than 15%.

15           2.- Procedure for the manufacture of high concentration manganese  
minitabets for aluminium bath alloying, according to claim 1, characterised in  
that the ground electrolytic Mn is subjected to a screening process with a sieve  
with a mesh of less than 450 microns.

20           3.- Procedure for the manufacture of high concentration manganese  
minitabets for aluminium bath alloying, according to previous claims,  
characterised in that the level of the Mn and Al, mix in the corresponding  
compacting means monitored by respective sensors to keep this mix level  
between limits that assure the execution of the actual compacting.

25           4.- Device for the manufacture of high concentration Mn minitabets  
for aluminium bath alloying, which, being designed for the execution of the  
procedure of the preceding claims starting from a mixture ground electrolytic  
Mn powder and atomised Al powder, said device comprising a mix storage and  
reception hopper, as well as compacting means in a suitable compaction  
30           chamber with dies in which the minitabets are formed, including also punches  
both for pressing and ejecting the formed tablets, is characterised in that the  
storage hopper (1) is provided with a central diffuser (3) that diverts the product  
towards the sides of the hopper, thereby preventing said product from passing  
directly to the respective feeder (5) and compacting (6) chambers, including  
35           between the feeder hopper (5) and the compacting hopper (6) a honeycomb

valve (10) for dispensing product to the respective dies (9) forming part of the compacting chamber (6) in which the minitablets are formed; said honeycomb valve (10) being designed to be divided sectorally so as to go on supplying the doses of product to the compacting chamber (6) individually, with the result that each of the dies (9) is filled for subsequent compacting, formation of the tablets and their ejection by means of the respective fixed punches (7), which act in combination with other moving punches (8) to carry out the compacting and pressing of the product in the dies (9).

5.- Device for the manufacture of high concentration Mn minitablets for aluminium bath alloying, according to claim 4, characterised in that it includes three electrical product level sensors in the compacting chamber (6) to monitor the maximum level A, the minimum level B and the safety level S, which determine the correct compacting of the product in the dies (9).